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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,688	07/15/2003	Felix A. Streiff	35666	8456
23589	7590	12/29/2005	EXAMINER	
HOVEY WILLIAMS LLP 2405 GRAND BLVD., SUITE 400 KANSAS CITY, MO 64108			COOLEY, CHARLES E	
			ART UNIT	PAPER NUMBER

1723

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/619,688

Applicant(s)

STREIFF ET AL.

Examiner

Charles E. Cooley

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 and 16-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-14 and 16-25 is/are allowed.
- 6) ☒ Claim(s) 26-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

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## **FINAL OFFICE ACTION (AFTER RCE)**

1. This application remains been assigned to Technology Center 1700, Art Unit 1723 and the following will apply for this application:

Please direct all written correspondence with the correct application serial number for this application to Art Unit 1723.

Telephone inquiries regarding this application should be directed to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 or to the Examiner at (571) 272-1139. All official facsimiles should be transmitted to (571) 273-8300.

### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12 DEC 2005 has been entered.

### ***Priority***

3. Acknowledgment is made of applicant's claim for domestic priority under 35 U.S.C. § 119(e).

***Specification***

4. The abstract is acceptable.
5. The title is acceptable.

***Claim Rejections - 35 U.S.C. § 112, first paragraph***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. The specification is objected to under 35 U.S.C. § 112, first paragraph, as the specification, as originally filed, does not provide support for the invention as is now claimed.

The limitations in newly presented claims 26, 42, and 47 regarding (a) "wherein said grids are arranged such that each crossing element of one grid intersects and extends at least partially through a slot in the other grid" (claim 26); (b) "(e) arranging said grids such that each crossing element of one grid intersects and extends at least partially through a slot in the other grid"; and (c) "wherein said grids are arranged such that each crossing element of one grid intersects and extends at least partially through a slot of the other grid" (claim 47) are not supported by the originally filed disclosure. The specification was reviewed and no literal support for this claim language was found. Since there exists no literal support for this subject matter, it remains unclear if the drawing figures (as a last resort) are capable of supporting said

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subject matter. Applicant remarks that the new claims are supported by para. [0023] but the examiner finds no support in this or any other paragraph of the specification or in the drawing figures.

8. Newly submitted claims 26-47 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**10. Claims 26-33, 37, 38, 41-44, and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 98/47791 (art already of record).**

WO 98/47791 discloses a static mixer as seen below comprising a static mixer assembly (Fig. 1) with a generally ring-shaped fluid flow conduit 1 having a central axis (along 5), concentric inner and outer, radially spaced, circumferentially extending surfaces, said inner surface defining a fluid flow path which extends along said axis; one or more static mixers 2 located in said flow path, each static mixer having a plurality of spaced crossing elements forming one or more first grids (the elements 3 on the left side of the conduit 1 in Figure 1) and one or more slots 8 positioned between and

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adjacent to each crossing element 3 of the one or more first grids; a second plurality of spaced crossing elements forming one or more second grids (the elements 3 on the right side of the conduit 1 in Figure 1) and one or more slots 8 positioned between and adjacent to each crossing element 3 of the second grids; wherein said crossing elements 3 of said first grid(s) are arranged at intersecting angles to said crossing elements 3 of said second grid(s), and wherein said grids are arranged such that each crossing element 3 of one grid intersects and extends at least partially through a slot 8 in the other grid (i.e., note the crossing elements 3 of the first and second grids at least partially circumferentially overlap such that portions of the crossing elements extend into slots of the opposing grid(s) as seen in Figure 1); at least one elongated connector 5 positioned between and secured to said crossing elements 3 of said first grid(s) and said crossing elements of said second grid(s); wherein said crossing elements 3 of said first grid(s) are in a generally parallel relationship relative to one another (Fig. 1); wherein said crossing elements 3 of said first grid(s) lie within a common plane (the plane to the left of the axis defined by connector 5); wherein said crossing elements 3 of said second grid(s) are in generally parallel relationship relative to one another (Fig. 1); wherein said crossing elements of said second grid(s) lie within a common plane (the plane to the right of the axis defined by connector 5); wherein said crossing elements are corrugated plates (a groove on the concave side parallel to the peak on the convex side); wherein the static mixer comprises more than two grids with each grid comprising crossing elements 3 (note Fig. 1 is a broken view depicting a plurality of crossing elements spaced along the axis of the conduit and since but two crossing elements on

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each of the opposite sides of the connector can constitute a grid, a multitude of grids are spaced along the length of the conduit); wherein said connector 5 extends continuously along the entire cross-sectional length of said static mixer (Fig. 1); wherein said elongated connector 5 is positioned so that it intersects with said crossing elements along at least some of their points of intersection (Fig. 1). Although the product-by-process subject matter of claim 41 is not germane to the patentability of the product, note the crossing elements 3 are apparently secured to said connector 5 by welding (proximate 6 in Fig. 1).

WO 98/47791 also discloses a method of constructing a static mixer, in light of the explanations above, comprising providing at least two grids; positioning at least two spaced crossing elements 3 and one or more slots 8 between and adjacent to each crossing element 3 in a first grid; positioning at least two spaced crossing elements 3 and one or more slots 8 between and adjacent to each crossing element in a second grid; arranging said crossing elements 3 of said first grid at intersecting angles to said crossing elements 3 of said second grid; arranging said grids such that each crossing element of one grid intersects and extends at least partially through a slot 8 in the other grid; positioning at least one connector 5 between said crossing elements 3 of said first grid and said crossing elements 3 of said second grid; and securing said connector 5 to said crossing elements 3; providing more than two grids along the length of the conduit 1; and positioning one or more crossing elements 3 in each grid.

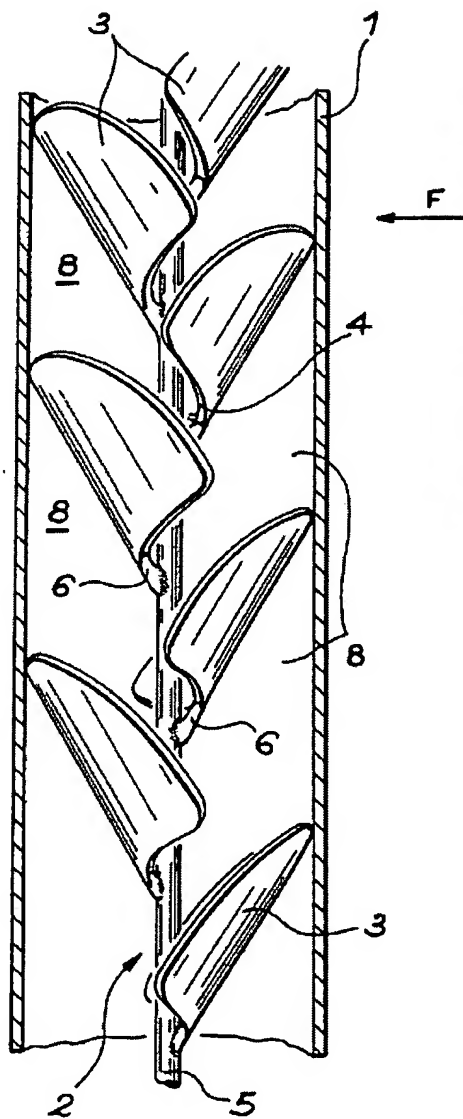


FIG. 1

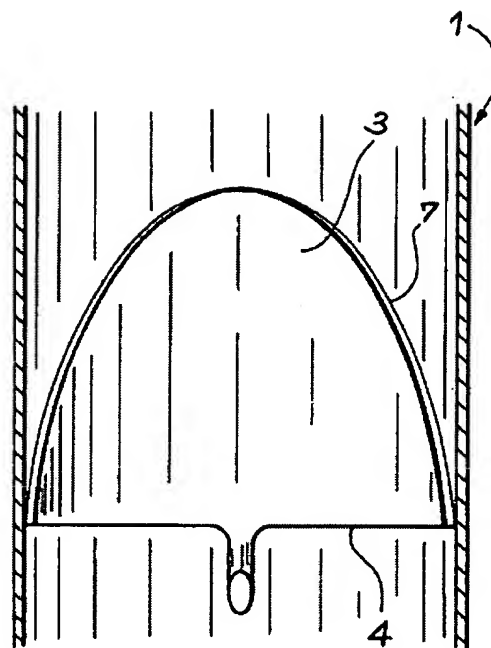


FIG. 2



***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**12. Claims 34, 35, 45, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 98/47791 in view of Katzen (3,190,618 - already of record).**

WO 98/47791 discloses that the connector 5 is positioned between said crossing elements 3 of each grid as seen in Figure 1 but does not disclose the crossing elements of each grid being arranged at intersecting angles to one another. The patent to Katzen '618 discloses in Fig. 5 a static mixer comprising spaced grids of crossing elements 29 that are secured to a central connector 28. The crossing elements 29 of adjacent grids are arranged at intersecting angles to one another as seen in Fig. 5. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have modified the arrangement of the grids in WO 98/47791 such that crossing elements of each grid are arranged at intersecting angles to one another as disclosed by Katzen '618 for the purpose of providing a highly effective sheer action on the fluid and providing a swirl action (col. 4, line 43 through col. 5, line 3).

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**13. Claims 36 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 98/47791 in view of Horner (US 4,093,188 - already of record).**

WO 98/47791 does not disclose the recited materials of the crossing elements but apparently shows the crossing elements 3 secured to the connector 5 by welding (proximate 6 in Figure 1). Assuming this is not the case, the patent to Horner '188 discloses a static mixer 20 and a method of constructing said static mixer comprising providing a first grid 32 comprising one or more crossing elements 38 and one or more slots adjacent to each crossing element 38 (Fig. 2 and col. 4, lines 60-63) and providing a second grid 34 comprising one or more crossing elements 38' and one or more slots adjacent to each crossing element 38' (Fig. 2 and col. 4, lines 60-63) wherein said crossing elements 38 of said first grid 32 are arranged at intersecting angles to said crossing elements of said second grid (Fig. 2 and col. 4, lines 19-23); and positioning at least one elongated connector 36 positioned between and secured to said crossing elements 38 of said first grid and said crossing elements 38' of said second grid; said grids 32, 34 are arranged such that each crossing element of one grid intersects a slot in the other grid (Fig. 2); said crossing elements 38 of said first grid 32 are in a generally parallel relationship relative to one another (col. 3, lines 60-64); said crossing elements 38 of said first grid 32 lie within a common plane (Figs. 2 and 4); said crossing elements 38' of said second grid 34 are in generally parallel relationship relative to one another (col. 3, line 67 through col. 4, line 3); said crossing elements 38 of said second grid lie within a common plane (Figs. 2 and 4); said crossing elements are one of corrugated plates and tubes (col. 5, lines 37-48); the static mixer 20 comprises more than two grids

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(e.g., the series of crossing elements 40 can be considered another grid and the series of crossing elements 40' can be considered yet another grid or see Fig. 10 and col. 5, lines 25-36 which explicitly teaches more than two grids); wherein each grid of the multiple grids comprises crossing elements such as 80, 82, 84 in Fig. 10 or the aforementioned crossing elements 40 and 40'; said crossing elements of each grid are arranged at intersecting angles to one another (such as 80, 82, 84 in Fig. 10 or the aforementioned crossing elements 40 and 40'); said connector 36 is positioned between said crossing elements of each grid as seen in Fig. 2; said crossing elements are one of metal, polymeric, ceramic construction or combinations thereof (col. 6, lines 29-41); said connector 36 extends continuously along the entire cross-sectional length of said static mixer (Fig. 1); said elongated connector 36 is positioned so that it intersects with said crossing elements along at least some of their points of intersection (Figs. 2 and 4); said crossing elements being secured to said connector by one of welding, brazing, gluing and combinations thereof (col. 6, lines 29-41); the static mixer including a generally ring-shaped fluid flow conduit 22 having a central axis, concentric inner and outer, radially spaced, circumferentially extending surfaces (Fig. 1); said inner surface defining a fluid flow path which extends along said axis (Fig. 1).

Accordingly it would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have secured the crossing elements to the connector in WO 98/47791 via welding as taught by Horner '188 for the purpose of attaching elements of a static mixer together via an art recognized attachment method.

It would have further been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have formed the static mixer of WO 98/47791 from metal or polymeric materials as taught by Horner '188 as determined by the desired size of the static mixer.

With regard to the material form which the static mixer is formed, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have formed any of the components of the prior art static mixer from metal, polymeric, ceramics, or combinations thereof, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416; *Sinclair & Carroll Co., Inc. v. Interchemical Corp.*, 65 USPQ 297 (1945).

Furthermore, in view of the fact that the use of the recited materials vis-à-vis any other common construction material solves no stated problem insofar as the record is concerned and the conclusion of obviousness can be made from the common knowledge and common sense of one of ordinary skill in the art (*In re Bozek*, 416 F.2d 1385, 163 USPQ 545 (CCPA 1969)), it would have been obvious to one of ordinary skill in the art to have formed any of the components of the prior art static mixer from a well-known construction materials such as metal, polymeric, ceramics, or combinations thereof,. *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975).

It is observed that artisans must be presumed to know something about the art apart from what the references disclose (see *In re Jacoby*, 309 F.2d 513, 135 USPQ 317 (CCPA 1962)). Moreover, skill is presumed on the part of those practicing in the

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art. See *In re Sovish*, 769 F.2d 738, 226 USPQ 771 (Fed. Cir. 1985). Therefore, it is concluded that the selection of a well-known material in the static mixer art such as metal, polymeric, ceramics, or combinations thereof, would have been obvious to one of ordinary skill in this art, if for no other reason than to achieve the advantage of using a more modern material or a lower cost or more easily fabricated material.

### ***Allowable Subject Matter***

14. Claims 39-40 would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, 1st paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

15. Claims 1-14 and 16-25 are allowable over the prior art of record.

### ***Response to Amendment***

16. Applicant's arguments with respect to the pending claims have been considered but are deemed to be moot in view of the new grounds of rejection necessitated by amendment (newly presented claims).

Applicant merely repeats the limitations of newly filed independent claims 26, 42, and 47 and asserts the new claims are novel in view of the cited art. However, the new claims (with the exception of claims 39 and 40 - directed to subject matter allowed throughout the prosecution) are believed rife with new matter and anticipated by as well as obvious in view of the cited art of record identified in the rejections above.

***Conclusion***

17. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Cooley whose telephone number is (571) 272-1139. The examiner can normally be reached on Mon-Fri. All official facsimiles should be transmitted to the centralized fax receiving number 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Charles" followed by a stylized flourish.

Charles E. Cooley  
Primary Examiner  
Art Unit 1723

26 December 2005